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July 19, 2013

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Brenda B. Epperson
Environmental Manager
MRP Properties Company, LLC
P.O. Box 696000
San Antonio, TX 78269-6000

RE: Comments on the Human Health Risk Assessment and Data Gap Investigation Work Plans
MRP Properties Company, LLC
1400 South M Street, Arkansas City, Kansas
RCRA ID# KSD087418695

Dear Ms. Epperson,

The Kansas Department of Health and Environment (KDHE) and the Environmental Protection Agency (EPA) Region 7 reviewed the Human Health Risk Assessment (HHRA) Work Plan dated January 25, 2013 and the Data Gap Investigation (DGI) Work Plan dated February 11, 2013, submitted by MWH Americas, Inc. on behalf of MRP Properties Company, LLC (MRP) for the Former Total Petroleum Refinery in Arkansas City. Submittal of the HHRA and DGI work plans is required under Section III.H. of the Part II Permit. The HHRA work plan reviews existing soil data and details methods to be used in the preparation of a baseline human health risk assessment. The DGI work plan addresses collection of supplemental data that will be necessary to complete the HHRA. The HHRA and DGI were both reviewed by an EPA risk assessor.

EPA has the following comments:

General Comment

1. The Work Plans indicate that the facility plans to collect additional soil samples in some areas for better characterization, as well as to conduct a baseline human health risk assessment according to the EPA's guidance. However, the facility continues to prefer to evaluate exposures to groundwater via ingestion or vapor intrusion separately, which we feel is inappropriate, particularly for current/future industrial/commercial workers with direct soil exposures and exposures via the vapor intrusion pathway. They also continue to plan to divide the facility into multiple areas for assessment. If this approach is to be pursued, we suggest a more meaningful division into areas with distinct exposure patterns.

Specific Comments

1. **Cover.** The title of this work plan specifically includes, "for Soils." However, groundwater, sediment, surface water, and indoor air should also be addressed in this work plan, as shown on Figure 4-1, the Conceptual Site Model, and as discussed in this memo. So as to not limit the work plan to soils, which is the correct approach, we suggest deleting "for Soils" from the title.

2. **Sections 1.0 (p. 1-1) and 1.2 (p. 1-4).** These sections indicate that the proposed work plan is for 13 exposure units delineated in the process area, junk storage area, and construction debris landfill, using existing data. Based on Figure 2-1, these 13 EUs appear to exclude many areas of potential interest for the site. For example, page 1-4 states, "[t]he remaining portions of the Site, including the former Tank Farm, will be evaluated at a later time." It does not appear that there is a plan to evaluate these other areas for inclusion in the upcoming human health risk assessment. Specifically, page 1-4 appears to indicate that a document separate from the risk assessment would characterize potential human health risks associated with any potential future data collected to address data gaps. As communicated previously via conference call on May 8, 2012, the EPA prefers that MRP collect additional data necessary to address gaps and then conduct a single human health risk assessment for the entire site using the currently available data together with the new data. However, if the facility is to be divided into multiple areas for assessment, we suggest a more meaningful division into areas with distinct exposure patterns. Please see Comment 18 for more details.

3. **Sections 1.0 (p. 1-1) and 1.2 (p. 1-5).** While this work plan is for the development of a human health risk assessment, it will also be necessary for MRP to perform a screening level ecological risk assessment. In particular, undeveloped land and ponds are located on site, and the site is in close proximity to the Arkansas and Walnut Rivers, all of which may provide habitats for a variety of ecological receptors. We disagree that "The Site currently contains no significant habitat for wildlife..." A Screening Level Ecological Risk Assessment consists of Steps 1and 2 out of an 8 step process (EPA, 1997). Region 7 ecological risk assessors use the following ecological screening levels:

   Surface water ecological screening levels:
   National Ambient Water Quality Criteria (U.S. EPA, 2009).
   http://water.epa.gov/scitech/swguidance/standards/criterialcurrent/index.cfm

   Kansas Water Quality Standards (KDHE, 2008)
   http://water.epa.gov/scitech/swguidance/standards/wqslibrary/upload/2008_11_12_standards wqslibrary ks_ks-tables.pdf

   Region 5 Ecological Screening Levels, (U.S.EPA, 2003)
   http://epa.gov/region05/waste/cars/pdfs/ecological-screening-levels-200308.pdf

   Sediment probable effect concentration ecological screening levels:
   MacDonald DD, Ingersoll CG, Berger T. 2000. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. *Arch Environ Contam Toxicol 39:20-31.*

   Region 5 Ecological Screening Levels, (U.S. EPA, 2003).
   http://epa.gov/region05/waste/cars/pdfs/ecological-screening-levels-200308.pdf

   Soil ecological screening levels:
   Ecological Soil Screening Levels.
   http://www.epa.gov/ecotox/ecossl/index.html

4. **Section 1.2 (pp. 1-4 and 1-5) and Section 4.1.1 (p. 4-1).** These sections indicate that site groundwater will not be addressed in the HHRA, including the drinking water and vapor intrusion pathways. As a reminder, a baseline human health risk assessment requires evaluation of all complete exposure pathways under current and potential future land use scenarios, excluding the presence of engineering controls. Without collection and evaluation of adequate groundwater data, potential human health risks via the drinking water and vapor intrusion pathways are unknown. The risk assessment should be an objective document that portrays potential risks. These risk estimates are then used by risk managers when considering potential remediation options, which may include institutional and other forms of engineering controls, vapor mitigation systems, and/or various cleanup options.

5. **Section 3.1 (p. 3-1).** The first paragraph of this section discusses historical data for the site. If such data do not represent current conditions (e.g., the soil samples collected in 1999 prior to removal of underground piping and movement of soil), we agree that it would be appropriate to exclude them from the risk assessment. However, we question whether some of the groundwater, surface water, and sediment data collected in 1990 might not still be representative of current site conditions. Age alone is not sufficient justification to exclude data. We recommend that MRP evaluate whether some of this older data, particularly in areas whether soils have not been disturbed or for other media, might add value to the risk assessment.

6. **Section 3.1 (p. 3-1) and Tables 3-1 and 3-2.** When reporting summary statistics, the maximum analytical method detection limit was listed, when available, for undetected compounds. Only when the MDL was unavailable was the maximum laboratory reporting limit listed. Although the MDL is the lowest concentration at which an analyte can be detected by a given method, the MRL is the lowest concentration at which an analyte can be quantified by a particular lab with a certain degree of precision and accuracy. Thus, for screening undetected compounds, the maximum MRL should be used, not the MDL.

7. **Section 3.1 (p. 3-1) and Tables 3-1 and 3-2.** The last paragraph in Section 3-1 indicates that screening level risk estimates were prepared for individual constituents based on the maximum detected concentration, MDL, or MRL. While we recognize that this may be another preliminary way to put potential risks into perspective, please understand that these "risk estimates" are highly uncertain and contain some inaccuracies. For subsurface soil, different exposure parameters and toxicity values are typically used to assess subchronic exposure scenarios. The EPA has not developed default subsurface soil screening levels because they are highly site-specific. In future risk assessment work plans, we encourage you to refrain from calculating preliminary risk estimates because they are highly uncertain and may be interpreted incorrectly.

8. **Tables 3-1 and 3-2.**

   a. **Date of screening levels.** Be sure to indicate the date of the EPA Regional Screening Level table that was referenced. The next biannual update of the RSL tables is expected in June 2013. The most current version available should be used in the HHRA; however, be aware that the screening levels for some compounds may change if new toxicity values become finalized between RSL table updates.

   b. **Adjust only RSLs based on noncancer health effects.** Tables 3-1 and 3-2 use 1/10 the value of both cancer and noncancer RSLs. For constituents where the RSL is based on carcinogenicity, please use the screening value that is listed in the EPA's tables, which represents an excess individual lifetime cancer risk of 1 x 10^{-6}. However, for constituents with an RSL based on noncancer health effects, please continue to make the adjustment so that the screening level represents a hazard quotient of 0.1 to account for additivity, rather than 1.0 as listed in EPA's RSL table.

c. **Arsenic.** The EPA recently recommended using 60% as the default value for relative oral bioavailability of arsenic in soil (USEPA, 2012). This parameter will be incorporated into the May 2013 RSL tables, resulting in slightly higher soil screening levels. For example, the industrial soil RSL based on a 1 x 10^{-6} excess individual lifetime cancer risk will be 2.4 mg/kg arsenic, and the RSL based on a noncancer hazard quotient of 0.1 will be 38 mg/kg. Please be sure to use the updated RSLs for arsenic in Tables 3-1 and 3-2.

d. **Chromium.** Unless speciation data are available, Region 7 assumes that all total chromium detected is the hexavalent form. Therefore, please use 5.6 mg/kg as the screening level for chromium in Tables 3-1 and 3-2. Because the maximum concentrations in Tables 3-1 and 3-2 exceed 5.6 mg/kg, chromium is expected to be a chemical of potential concern at this site, and potential risks should be quantified in the risk assessment. However, based on the levels in Tables 3-1 and 3-2, potential variability among the samples, and consideration of the target cancer risk range, we note that these risk estimates may not be unacceptable. (Please also see Comment 10a.)

e. **Cyanide.** Please use an industrial soil screening level of 14 mg/kg, based on a noncancer hazard quotient of 0.1, instead of 61 mg/kg.

f. **Site-related constituents.** Although screening levels are generally used to reduce the list of chemicals of potential concern, please note that Region 7 does not "screen out" site-related constituents. For example, if a given class of compounds is associated with historical or current operations of a site, all of those compounds would be retained as COPCs. If concentrations are of minimal concern, this will be evident in the quantitative risk estimates.

g. **Total Petroleum Hydrocarbons.** In our previous comments, we requested analysis for TPH. Because this facility is a former petroleum refinery, it is expected that TPH contamination is present; however as we discussed with ENSV on 7-8-13 it will be acceptable to forego TPH analysis, in light of the fact that other constituents can be used to assess a corresponding risk.

9. **Section 3.2 (pp. 3-1 – 3-2).** The first paragraph of Section 3.2 discusses various aspects of data quality and usability. When evaluating data usability for risk assessment purposes, please follow USEPA (1992).

10. **Section 3.2 (pp. 3-2 – 3-3).** These pages draw preliminary conclusions based on Tables 3-1 and 3-2. We note that many of these conclusions may change, based on the comments in this memo. Typically, preliminary screening and risk estimates are not presented in a work plan. In particular, we have very low confidence in risk estimates not derived in accordance with the EPA's risk assessment guidance.

    a. **Metals.** As discussed previously, chromium should be included as a COPC in soil, based on screening the available data using 5.6 mg/kg as the industrial soil screening level. However, as also discussed above, chromium may not present unacceptable health risks at this site that are greater than the EPA's target cancer risk range or a noncancer hazard quotient of 1.0.

We support the proposal to collect additional samples and analyze them for hexavalent and total chromium, primarily if risk estimates derived using hexavalent chromium toxicity factors are unacceptable. According to the Data Gap Soil Investigation Work Plan, these additional samples will be collected from locations where total chromium levels were greater than 37 mg/kg. Justification for this criterion is that 37 mg/kg is "the mean ambient soil concentration for chromium in the coterminous United States." Ambient metal concentrations are geographically specific, so 37 mg/kg is not necessarily an accurate background level for this site. However, we support use of this level to focus sampling in areas where there is the greatest potential for high levels of hexavalent chromium. We note that cancer risks to industrial workers at 37 mg/kg hexavalent chromium are at the lower end of the EPA's target cancer risk range (approximately 7×10^{-6}). Thus, areas with unacceptably high concentrations of hexavalent chromium are unlikely to be missed, using a criterion of 37 mg/kg.

We do expect that some hexavalent chromium will be present, possibly at low levels. If the ratio of hexavalent to total chromium is fairly consistent and the samples are representative of a given exposure area or the entire site, it may be possible to apply that ratio when screening and/or deriving risk estimates. If the ratio is consistent across the site, the proposed number and location of new samples for chromium speciation should provide adequate statistical power for decision-making purposes. However, in case this ratio varies, MRP might consider collecting additional samples from areas that have the highest levels of total chromium (e.g., EU 10) in order to have sufficient statistical power.

b. **VOCs.** The work plan notes the presence of dilution issues and matrix interference that will make it unlikely to obtain lower reporting limits if additional samples are analyzed for several of the VOCs. As discussed above, the reporting limits must be used in the screening process, rather than the detection limits. If the maximum detected concentration or maximum reporting limit for a given constituent exceeds its screening level, the constituent must be retained as a COPC for quantitative assessment. In addition, site-related compounds must be retained as COPCs. This would include petroleum additives historically or currently used or present at this site, possibly including ethylene dibromide, 1,2-dichloroethane, MTBE, and/or others.

11. **Section 3.2 (pp. 3-3 - 3-4).** One data gap addressed on these pages and in the data gap work plan is that all samples for 7,12-dimethylbenz(a)anthracene were non-detect, with reporting limits greater than the industrial soil RSL. The data gap work plan proposes to collect additional samples to be analyzed for this particular constituent.

Although PAHs generally are associated with asphalt sites, we are not aware of a particular concern for 7,12-dimethylbenz(a)anthracene. In fact, this compound is often produced for scientific cancer research, since it is such a strong tumor promoter. We recommend that MRP reconsider whether targeted analysis for this one type of PAH is appropriate, given that it is not necessarily associated with this site and that the reporting limit would have to be extremely low to reach the industrial soil RSL. If MRP has reason to believe this compound is associated with this site, it should be investigated and retained as a COPC; otherwise re-sampling to achieve lower reporting limits is unnecessary.

Instead, we recommend that MRP attempt to best characterize the full suite of PAHs (including naphthalene) throughout the site. Table 2-1 of the data gap work plan appears to include all of the PAHs in the SVOC analysis, with the exception of naphthalene. Although naphthalene is included in the list for VOC analysis, not all of the proposed Phase II samples will be analyzed for VOCs. Reporting limits are often an issue with PAHs, so we suggest trying to obtain as close to 10 samples as possible per exposure unit, with adequate RLs for benzo(a)pyrene.

12. **Section 4.1.1 (p. 4-1).** The third paragraph in this section mentioned that cumulative effects screening will be performed by dividing the RSL by 10. As mentioned above, Region 7 uses screening levels based on a 1E-6 excess lifetime cancer risk or a noncancer hazard quotient of 0.1. The upcoming May 2013 RSL tables will include noncancer RSLs based on an HQ of 0.1, in addition to an HQ of 1.

13. **Section 4.1.1 (pp. 4-1 – 4-2 and Table 4-1.** When screening for COPCs, please retain all constituents in which the maximum detected concentration or reporting limit (not detection limit) exceeds the screening level for quantitative assessment. In addition, please retain all site-related constituents that are known to have been used or present historically or currently at the site. This may include TPH, benzene, toluene, ethylbenzene, xylenes, PAHs including naphthalene, some metals, and petroleum additives such as ethylene dibromide, 1,2-dichloroethane, and/or MTBE. Comparison to site-specific background levels should be done as part of the risk characterization process, not as a screening step (USEPA, 2002a; USEPA, 2002b).

14. **Sections 4.1.2.2 and 4.1.2.3 (pp. 4-2 - 4-4) and Figure 4-1.** These sections describe potential receptors and potentially complete exposure pathways, and this figure presents the conceptual site model. Sections 4.1.2.2 and 4.1.2.3 and Figure 4-1 indicate that exposure to groundwater will not be evaluated because potable wells will be prohibited and because the current groundwater treatment system is decreasing contaminant concentrations. The National Contingency Plan Preamble (55 FR 8710-8711) states, "The role of the baseline risk assessment is to address the risk associated with a site in the absence of any remedial action or control, including institutional controls." A quantitative risk assessment that evaluates potential exposures to groundwater is necessary to make appropriate risk management decisions, which may include institutional controls restricting use of groundwater at this site. The Preamble also reminds us that, "…It is EPA policy to consider the beneficial use of the water and to protect against current and future exposures. Groundwater is a valuable resource and should be protected and restored if necessary and practicable. Groundwater that is not currently used may be a drinking water supply in the future." The drinking water pathway must be evaluated in the baseline risk assessment for current and potential future receptors, despite potential future administrative controls prohibiting the use of groundwater as a source of drinking water. Potential vapor intrusion from groundwater must also be evaluated, particularly in existing buildings.

15. **Section 4.1.2.3 (pp. 4-3 – 4-4), Figure 4-1, and Section 4.2.1 (p. 4-5).**

    a. **Current industrial/commercial workers.** Figure 4-1 indicates that exposure to soil by current industrial/commercial workers is "Potentially Complete but Insignificant Pathway." We believe the intent is to evaluate risks to future commercial/industrial workers, using more conservative exposure parameters than would be used to assess current workers. If this is the case, risk estimates for future workers would be protective of the less exposed current workers. For current workers, we recommend changing, "Potentially Complete but Insignificant Pathway" to, "Complete Exposure Pathway". Then, in the footnotes of Figure 4-1 and in Section 4.1.2.3, please add a statement that the current commercial/industrial worker scenario will not be evaluated in the risk assessment even though it is a complete pathway, because evaluation of future commercial/industrial workers will be protective of current workers.

b. **Future industrial/commercial workers.** Section 4.1.2.3 and Figure 4-1 indicate that exposure to soil via incidental ingestion, dermal contact, and inhalation of soil-derived dust and volatiles are complete exposure pathways for future workers. Please note that we assume industrial/commercial workers are only exposed to surface soil, not subsurface soil. We suggest including surface soil and subsurface soil as two separate "exposure media" in Figure 4-1.

As previously mentioned, please evaluate worker exposure to groundwater through the direct ingestion pathway and the vapor intrusion pathway. For ingestion, we typically assume a 1 L/day rate for industrial/commercial workers (USEPA, 1991). We do not generally evaluate commercial/industrial exposure to groundwater via dermal contact or inhalation resulting from household use (i.e., showering, bathing, washing hands, etc.) because these are insignificant pathways. We do, however, require evaluation of the vapor intrusion pathway. This will involve use of shallow groundwater data, along with a default or site-specific attenuation factors. In existing buildings, subslab soil gas and/or indoor air samples may be required.

We note the presence of surface water (e.g., oxidation ponds and no. 3B pond). Exposure to surface water (and sediment, if present) by future industrial/commercial workers is a potentially complete exposure pathway that should be considered in the HHRA.

c. **Future utility/construction workers.** Section 4.1.2.3 and Figure 4-1 correctly indicate that these receptors are exposed to surface and subsurface soil via incidental ingestion, dermal contact, and inhalation of volatiles and particulates. Exposures to groundwater via the direct ingestion and vapor intrusion pathways are incomplete for utility/construction workers. However, the HHRA should evaluate inhalation of volatiles from groundwater in a trench. In addition, if groundwater is present at around 10 ft bgs or less, taking into consideration temporal and seasonal variability, the HHRA must evaluate direct contact by construction workers with groundwater via incidental ingestion and dermal contact. Finally, if it is possible that future construction workers could be exposed to surface water/sediment on-site, this pathway should be evaluated in the HHRA.

d. **Current/future off-site recreational users.** Figure 4-1 indicates that exposure to soil by current recreational users is potentially complete but insignificant, and that exposure to surface water, sediment, groundwater, and indoor air is an incomplete pathway. We agree that exposures to indoor air and groundwater by recreational users are incomplete pathways. However, data should be used to show that exposure to soil, sediment, and surface water by recreational users are insignificant or incomplete. More specifically, adequate data should be available to delineate the horizontal (and vertical) extent of contamination. As long as these data show that contamination is confined to the site, exposure to off-site recreational users is not expected.

e. **Current/future on-site trespassers.** Trespassers were not considered in Section 4.1.2.3, Figure 4-1, or Section 4.2.1. Exposure to on-site surface soil, sediment, and surface water is a complete pathway for trespassers. However, exposure to surface soil by commercial/industrial workers should be protective of trespassers.

f. **Future residents.** For completeness, we suggest indicating that exposures to future residents are unexpected on-site, based on current zoning, proximity to rivers, location in a flood plain, etc.

16. **Section 4.2 (pp. 4-4 and 4-5).** Section 4.2 lists several USEPA guidance documents that will be used to develop the risk assessment. Please also list and use RAGS Part D (USEPA, 2001). The RAGS Part D tables are a standard component of a baseline HHRA.

17. **Section 4.2 (p. 4-5).** Section 4.2 indicates that the HHRA will consist of an exposure assessment, exposure quantification, toxicity assessment, and risk characterization. Although these are most of the important components of a baseline risk assessment, data evaluation and identification of chemicals of potential concern were not listed. Please include these sections in this HHRA. In addition, we suggest referring to Exhibits 9-1 and 9-2 of RAGS Part A (USEPA, 1989), which contain a suggested outline for baseline HHRAs and a checklist for reviewers.

18. **Section 4.2.2 (p. 4-5).** This section mentions that the 13 exposure areas will consist of the Junk Storage Area, Construction Debris Landfill, and five acre exposure units in the Process Area. As we mentioned above, please define additional exposure units to assess risks over the entire site. The areas planned for inclusion in the HHRA and those not yet considered are intermingled. For example, the Junk Storage Area is located within the Tank Farm Area. Risks to receptors in these areas are likely similar, and exposures may even occur across adjacent areas. Thus, the division of the site as it is currently planned does not seem logical. Division into multiple risk assessments might be possible, if it could be demonstrated that exposures and risks for the different areas were truly expected to be different.

19. **Section 4.2.2.1 (p. 4-6).** This section describes how exposure point concentrations will be calculated. In general, the section correctly identifies that 95% upper confidence limits on the mean concentration are used as EPCs. However, please be aware that if risks from exposure to lead are assessed, we use a central tendency estimate (i.e., the mean concentration). In addition, Section 4.2.2.1 indicates that if insufficient data are available to calculate a 95% UCL or if the 95% UCL exceeds the maximum detected concentration, then the maximum detected concentration will be used as the EPC. Please note that both of these situations indicate that more data is needed because the number of samples is limited and/or the variability in concentrations is quite large. If possible, we recommend that MRP collect additional samples for any media in any exposure units where there are less than around 10 samples. If sufficient data are available to calculate a 95% UCL which exceeds the maximum detected concentration, this 95% UCL should be used as the EPC.

20. **Section 4.2.2.2 (p. 4-6).** When calculating oral intake of arsenic in soil, the EPA now recommends using a relative bioavailability of 60% (USEPA, 2012). The RBA for all other compounds (besides arsenic and lead) remains 100%. Please note that this value is only applied to the oral pathway, and only for intake of soil (not water or air).

21. **Section 4.2.2.2 (pp. 4-6 and 4-7).** This section lists the intake equations. In the numerator of the inhalation equations, please be sure to include the conversion factor of 24 hours/day. In addition, either a Volatilization Factor or a Particulate Emission Factor should be used in the inhalation intake equations, depending on the volatility of the particular chemical, not both.

22. **Table 4.2.** This table provides the exposure parameters that will be used for the commercial/industrial and utility/construction scenarios.

    a. The parameters for commercial/industrial workers are for outdoor workers. Please also include indoor workers because we do not assess the vapor intrusion pathway for outdoor workers. The soil ingestion rate and exposure frequency are slightly different for indoor workers, compared to outdoor industrial/commercial workers.

b. We were unable to verify the values of PEF for the commercial/industrial workers and the utility/construction workers. The input parameters used to calculate site-specific PEF values were not provided. Please note that the site-specific commercial/industrial PEF is only dependent upon the size of the contaminated area and the geographic location. The subchronic PEF includes a dispersion correction factor. Please consult both Section 5.0 and Appendix E of the Supplemental Soil Screening Guidance (USEPA, 2002c) when calculating this PEF.

c. A non-cancer averaging time of 365 days was used for the utility/construction worker scenario, but the selected exposure frequency was 50 days/year. The non-cancer averaging time should represent the entire duration of the construction project. For example, if the 50 days/year exposure frequency represents 5-day work weeks, 50/5 is 10 weeks, and 10 weeks * 7 days/week is 70 days. In this example, 70 days should be used as the non-cancer averaging time. MRP may determine that year long construction projects are more likely; however, in this case, a larger exposure frequency should be used.

23. **Section 4.3 (pp. 4-7 and 4-8) and Table 4-3**. Section 4.3 lists the sources for toxicity values, and Table 4-3 lists the toxicity values to be used in the HHRA. Please note that toxicity values should be selected according to the hierarchy specified in USEPA (2003). In general, the EPA's RSL tables are a reliable source of the appropriate chronic toxicity values. However, because the RSL tables are only updated biannually, there have been cases in which a new toxicity value has become available, but has not yet included in the tables. For example, new toxicity values for 1,4-dioxane are currently under review by the EPA's IRIS program. Of the toxicity values listed in Table 4-3, the cancer slope factor for chloroform should be 3.1E-02 $(mg/kg\text{-}day)^{-1}$, not 1E-02 $(mg/kg\text{-}day)^{-1}$.

    Please note that subchronic toxicity values should be used, when available, to evaluate the subchronic utility/construction worker scenario. The Provisional Peer Reviewed Toxicity Values contain some subchronic toxicity values, and ATSDR publishes intermediate-term minimal risk levels for some compounds.

24. **Section 4.3.1.2 (p. 4-8).** This section indicates that the Adult Lead Methodology will be used to assess potential risks from exposure to lead by industrial/commercial and utility/construction workers. We were unable to review the exposure parameters planned for use in the ALM because they were not provided in the work plan. Please remember that CTE values are typically used for many of the exposure parameters, as opposed to the RME values used to assess risks from chemicals other than lead.

25. **Background Arsenic Samples.** Figure 2-11 of the Data Gap Soil Investigation Work Plan shows the proposed locations for eight background arsenic samples. From each location, a surface (0 – 2 ft bgs), medium (2 – 4 ft bgs), and deep (4 – 10 ft bgs) sample will be collected, for a total of 24 samples. The samples will be collected from an area immediately southeast of the property boundary.

    We note that the highest concentration of arsenic detected in any one sample was 75 mg/kg, in a surface soil sample collected from EU 7. This concentration falls within the EPA's target cancer risk range and is less than a noncancer hazard quotient of 1.0. Although arsenic would be retained as a COPC during the screening process, it is not likely that arsenic will result in unacceptable risk estimates. A background study may be beneficial depending on the results of the risk assessment, but it is not recommended at this time.

If MRP still chooses to conduct a background arsenic study, please describe why the area is suitable as a background location. This might include geography, types of soil, nearby sources of arsenic contamination, wind speed and direction, land contours, surface water drainage patterns, etc. In particular, because the proposed background area is located so close to the site, is there evidence that it has not been contaminated? Generally, a minimum of 10 samples is necessary for adequate statistical power. It is unclear whether MRP intends to calculate surface, mid-depth, and deep background arsenic concentrations, for which there are eight samples each. Alternatively, MRP may intend to combine all 24 samples into one dataset. A Background Threshold Value or Values should be calculated using the default in ProUCL; that is, the 95% confidence on the 90^{th} percentile. Any apparent outliers should be subjected to ProUCL's statistical outlier test. The resulting ProUCL output files or sheets should be included if the BTVs are referenced or used to make decisions.

References

U.S. EPA. 1989. *Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual - Part A.* Office of Emergency and Remedial Response, Washington, D.C. EPA/540/1-89/002.

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Please respond to these comments by August 26, 2013 and submit revised pages as necessary. If you have any questions, please contact me by phone at (785)-291-3760 or e-mail at (mvishnefske@kdheks.gov). Brad Roberts (EPA) can be contacted at (913)-551-7279 or e-mail at (roberts.bradley@epa.gov).

Sincerely,

Mark Vishnefske

Mark Vishnefske
Environmental Scientist II
Hazardous Waste Corrective Actions

cc: Jay Mednick – MWH
Brad Roberts – EPA Region VII - AWMD/WRAP
Allison Herring – DEA/SCDO/Waste Programs
Bill Bider – BWM